

# DIABETES IN ECDON

## Estimated Number of Persons With Diabetes (PWD) in ECDON

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **72,330 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **8,400 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **850 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **29,270 adults have diabetes but are not aware of it.**<sup>4</sup> Among adults, **201,240 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in ECDON in 2002 Diagnosed with Diabetes<sup>1</sup>

Age Group	Total*	Female	Male	White	African American
18-44	11,800	5,870	5,930	9,450	1,870
45-54	15,540	7,830	7,710	12,860	2,280
55-64	17,060	8,180	8,880	14,450	2,770
65-74	14,420	7,650	6,770	12,350	2,820
75+	13,510	8,050	5,460	12,260	1,280
<b>Total</b>	<b>72,330</b>	<b>37,580</b>	<b>34,750</b>	<b>61,370</b>	<b>11,020</b>
(95% CI**)	(±7,700)	(±5,480)	(±5,400)	(±7,020)	(±3,170)

\* Difference in totals is due to presence of 940 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in ECDON may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the 6th leading cause of death in Michigan. Diabetes was the primary cause of death for 439 individuals (3.7% of all deaths) and a contributing cause in an additional 769 deaths (6.5%).<sup>6</sup>

### Deaths in ECDON of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	Male	White	Female	Male
0-44	19 (1.61)	9 (1.98)	8 (1.63)		0 (NA)	2 (NA)
45-54	37 (2.38)	12 (1.91)	14 (2.13)		6 (NA)	5 (NA)
55-64	72 (4.22)	16 (2.29)	39 (5.23)		8 (5.84)	7 (5.00)
65-74	98 (6.80)	46 (7.04)	37 (6.36)		8 (4.42)	5 (NA)
75+	213 (15.77)	113 (15.50)	84 (16.90)		6 (NA)	8 (19.05)
<b>Total</b>	<b>439 (6.07)</b>	<b>196 (6.19)</b>	<b>182 (6.12)</b>		<b>28 (7.20)</b>	<b>27 (8.63)</b>

\*Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 32,661 hospital discharges of ECDON residents where diabetes was listed among the diagnoses. There were 1,999 (6.1%) of these hospitalizations that were directly due to diabetes, while an additional 11,120 (34.0%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 29,522 discharges with 2,059 (7.4%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	2,059	7.4%	1,999	6.1%
Hypertension	669	1.3%	606	1.9%
Other CVD	10,032	35.0%	10,514	32.2%
Kidney	270	1.0%	353	1.1%
Pneumonia	947	3.6%	1,142	3.5%
Other	15,545	51.9%	18,047	55.3%
<b>TOTAL</b>	<b>29,522</b>		<b>32,661</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 219 or 11.0% of the 1,999 hospital discharges with a primary diagnosis of diabetes. This compares to 228 amputations or 11.1% of the 2,059 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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# DIABETES IN ARENAC COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Arenac County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **1,070 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **20 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **10 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **450 Arenac County adults have diabetes but are not aware of it.**<sup>4</sup> Among Arenac County adults, **3,037 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Arenac County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	150 ( 2.4)	80 ( 2.7)	70 ( 2.1)	140 ( 2.4)
45-54	180 ( 7.4)	100 ( 8.6)	80 ( 6.2)	170 ( 7.0)
55-64	250 (12.3)	110 (10.9)	140 (13.6)	250 (12.2)
65-74	280 (16.1)	150 (17.2)	130 (14.9)	270 (15.6)
75+	210 (17.6)	110 (16.6)	100 (19.0)	210 (17.3)
<b>Total</b> (95% CI**)	<b>1,070 ( 7.2)</b> (±110)	<b>550 ( 7.7)</b> (±70)	<b>520 ( 6.8)</b> (±80)	<b>1,040 ( 7.2)</b> (±110)

\* Difference in totals is due to presence of 60 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Arenac County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the eighth leading cause of death for Arenac County residents. Diabetes was the primary cause of death for 2 individuals (1.2% of all deaths) and a contributing cause in an additional 13 deaths (7.7%).<sup>6</sup>

### Deaths in Arenac County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	0 (NA)	0 (NA)		0 (NA)
45-54	0 (NA)	0 (NA)		0 (NA)
55-64	1 (NA)	0 (NA)		1 (NA)
65-74	1 (NA)	1 (NA)		0 (NA)
75+	0 (NA)	0 (NA)		0 (NA)
<b>Total</b>	<b>2 (NA)</b>	<b>1 (NA)</b>		<b>1 (NA)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 514 hospital discharges of Arenac County residents where diabetes was listed among the diagnoses. There were 12 (2.3%) of these hospitalizations that were directly due to diabetes, while an additional 239 (46.5%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 442 discharges with 14 (3.2%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	14	3.2%	12	2.3%
Hypertension	4	0.9%	4	0.8%
Other CVD	204	46.2%	235	45.7%
Kidney	7	1.6%	6	1.2%
Pneumonia	9	2.0%	18	3.5%
Other	204	46.2%	239	46.5%
<b>TOTAL</b>	<b>442</b>		<b>514</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 3 or 25.0% of the 12 hospital discharges with a primary diagnosis of diabetes. This compares to 1 amputation or 7.1% of the 14 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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# DIABETES IN BAY COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Bay County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **6,350 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **380 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **70 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **2,590 Bay County adults have diabetes but are not aware of it.**<sup>4</sup> Among Bay County adults, **18,082 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Bay County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	950 ( 2.4)	530 ( 2.7)	410 ( 2.1)	910 ( 2.4)
45-54	1,250 ( 7.4)	730 ( 8.6)	520 ( 6.2)	1,160 ( 7.0)
55-64	1,410 (12.3)	640 (10.9)	770 (13.6)	1,380 (12.2)
65-74	1,260 (16.1)	740 (17.2)	530 (14.9)	1,210 (15.6)
75+	1,480 (17.6)	910 (16.6)	560 (19.0)	1,450 (17.3)
<b>Total</b> (95% CI**)	<b>6,350 ( 7.2)</b> (±670)	<b>3,550 ( 7.7)</b> (±480)	<b>2,790 ( 6.8)</b> (±470)	<b>6,110 ( 7.2)</b> (±680)

\* Difference in totals is due to presence of 250 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Bay County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the fifth leading cause of death for Bay County residents. Diabetes was the primary cause of death for 44 individuals (3.9% of all deaths) and a contributing cause in an additional 65 deaths (5.8%).<sup>6</sup>

### Deaths in Bay County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	1 (NA)	0 (NA)		1 (NA)
45-54	0 (NA)	0 (NA)		0 (NA)
55-64	3 (NA)	1 (NA)		2 (NA)
65-74	15 (11.90)	9 (12.68)		6 (NA)
75+	25 (16.89)	13 (14.61)		12 (21.82)
<b>Total</b>	<b>44 (6.93)</b>	<b>23 (6.80)</b>		<b>21 (7.75)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 2,981 hospital discharges of Bay County residents where diabetes was listed among the diagnoses. There were 128 (4.3%) of these hospitalizations that were directly due to diabetes, while an additional 1,078 (36.2%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 2,794 discharges with 155 (5.6%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	155	5.6%	128	4.3%
Hypertension	51	1.8%	77	2.6%
Other CVD	1,052	37.7%	1,001	33.6%
Kidney	17	0.6%	20	0.7%
Pneumonia	59	2.1%	80	2.7%
Other	1,460	52.3%	1,675	56.2%
<b>TOTAL</b>	<b>2,794</b>		<b>2,981</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 15 or 11.7% of the 128 hospital discharges with a primary diagnosis of diabetes. This compares to 10 amputations or 6.5% of the 155 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
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# DIABETES IN CLARE COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Clare County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **1,960 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **30 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **20 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **820 Clare County adults have diabetes but are not aware of it.**<sup>4</sup> Among Clare County adults, **5,499 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Clare County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	250 ( 2.4)	140 ( 2.7)	110 ( 2.1)	250 ( 2.4)
45-54	320 ( 7.4)	190 ( 8.6)	130 ( 6.2)	300 ( 7.0)
55-64	480 (12.3)	220 (10.9)	260 (13.6)	480 (12.2)
65-74	510 (16.1)	280 (17.2)	240 (14.9)	500 (15.6)
75+	400 (17.6)	220 (16.6)	180 (19.0)	400 (17.3)
<b>Total</b> (95% CI**)	<b>1,960 ( 7.2)</b> (±200)	<b>1,050 ( 7.7)</b> (±140)	<b>920 ( 6.8)</b> (±140)	<b>1,930 ( 7.2)</b> (±200)

\* Difference in totals is due to presence of 50 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Clare County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the seventh leading cause of death for Clare County residents. Diabetes was the primary cause of death for 8 individuals (2.2% of all deaths) and a contributing cause in an additional 18 deaths (4.9%).<sup>6</sup>

### Deaths in Clare County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	0 (NA)	0 (NA)		0 (NA)
45-54	0 (NA)	0 (NA)		0 (NA)
55-64	1 (NA)	0 (NA)		1 (NA)
65-74	4 (NA)	2 (NA)		2 (NA)
75+	3 (NA)	3 (NA)		0 (NA)
<b>Total</b>	<b>8 (4.08)</b>	<b>5 (NA)</b>		<b>3 (NA)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 1,113 hospital discharges of Clare County residents where diabetes was listed among the diagnoses. There were 44 (4.0%) of these hospitalizations that were directly due to diabetes, while an additional 422 (37.9%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 855 discharges with 51 (6.0%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	51	6.0%	44	4.0%
Hypertension	7	0.8%	8	0.7%
Other CVD	284	33.2%	414	37.2%
Kidney	10	1.2%	17	1.5%
Pneumonia	52	6.1%	57	5.1%
Other	451	52.8%	573	51.5%
<b>TOTAL</b>	<b>855</b>		<b>1,113</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 4 or 9.1% of the 44 hospital discharges with a primary diagnosis of diabetes. This compares to 5 amputations or 9.8% of the 51 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
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# DIABETES IN GENESEE COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Genesee County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **24,930 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **890 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **310 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **10,010 Genesee County adults have diabetes but are not aware of it.**<sup>4</sup> Among Genesee County adults, **67,469 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Genesee County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White	African American
18-44	4,200 ( 2.5)	1,830 ( 2.1)	2,350 ( 2.9)	2,830 ( 2.2)	1,200 ( 3.6)
45-54	5,910 ( 9.4)	2,600 ( 7.9)	3,280 (10.8)	4,380 ( 8.7)	1,530 (13.2)
55-64	6,120 (14.9)	3,090 (14.4)	3,030 (15.4)	4,430 (13.2)	1,840 (26.4)
65-74	4,800 (16.6)	2,390 (14.9)	2,400 (18.7)	3,580 (15.1)	2,050 (42.1)
75+	3,900 (16.6)	2,420 (16.2)	1,570 (18.4)	3,300 (16.1)	880 (30.5)
<b>Total</b> (95% CI**)	<b>24,930 ( 7.4)</b> (±2,410)	<b>12,330 ( 7.0)</b> (±1,640)	<b>12,630 ( 7.8)</b> (±1,730)	<b>18,520 ( 6.9)</b> (±1,920)	<b>7,500 (10.8)</b> (±1,900)

\* Difference in totals is due to presence of 160 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Genesee County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the fifth leading cause of death for Genesee County residents. Diabetes was the primary cause of death for 146 individuals (3.6% of all deaths) and a contributing cause in an additional 272 deaths (6.6%).<sup>6</sup>

### Deaths in Genesee County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	Male	White	Female	Male
0-44	7 (1.67)	4 (NA)	2 (NA)		0 (NA)	1 (NA)
45-54	15 (2.54)	4 (NA)	5 (NA)		4 (NA)	2 (NA)
55-64	34 (5.56)	8 (3.42)	16 (7.66)		5 (NA)	4 (NA)
65-74	34 (7.08)	15 (8.67)	13 (7.07)		3 (NA)	3 (NA)
75+	56 (14.36)	34 (17.26)	15 (11.72)		4 (NA)	2 (NA)
<b>Total</b>	<b>146 (5.86)</b>	<b>65 (7.32)</b>	<b>51 (5.40)</b>		<b>16 (4.76)</b>	<b>12 (3.85)</b>

\*Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 11,268 hospital discharges of Genesee County residents where diabetes was listed among the diagnoses. There were 721 (6.4%) of these hospitalizations that were directly due to diabetes, while an additional 3,788 (33.6%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 10,219 discharges with 762 (7.5%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	762	7.5%	721	6.4%
Hypertension	228	2.2%	261	2.3%
Other CVD	3,319	32.5%	3,527	31.3%
Kidney	131	1.3%	170	1.5%
Pneumonia	350	3.4%	396	3.5%
Other	5,429	53.1%	6,193	55.0%
<b>TOTAL</b>	<b>10,219</b>		<b>11,268</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 75 or 10.4% of the 721 hospital discharges with a primary diagnosis of diabetes. This compares to 70 amputations or 9.2% of the 762 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
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# DIABETES IN GLADWIN COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Gladwin County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **1,760 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **20 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **20 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **730 Gladwin County adults have diabetes but are not aware of it.**<sup>4</sup> Among Gladwin County adults, **4,830 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Gladwin County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	210 ( 2.4)	120 ( 2.7)	90 ( 2.1)	200 ( 2.4)
45-54	270 ( 7.4)	160 ( 8.6)	110 ( 6.2)	250 ( 7.0)
55-64	440 (12.3)	200 (10.9)	240 (13.6)	430 (12.2)
65-74	470 (16.1)	250 (17.2)	220 (14.9)	450 (15.6)
75+	370 (17.6)	200 (16.6)	170 (19.0)	360 (17.3)
<b>Total</b> (95% CI**)	<b>1,760 ( 7.2)</b> (±170)	<b>930 ( 7.7)</b> (±120)	<b>830 ( 6.8)</b> (±120)	<b>1,690 ( 7.2)</b> (±170)

\* Difference in totals is due to presence of 60 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Gladwin County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the sixth leading cause of death for Gladwin County residents. Diabetes was the primary cause of death for 10 individuals (3.5% of all deaths) and a contributing cause in an additional 17 deaths (6%).<sup>6</sup>

### Deaths in Gladwin County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	0 (NA)	0 (NA)	0 (NA)	0 (NA)
45-54	0 (NA)	0 (NA)	0 (NA)	0 (NA)
55-64	0 (NA)	0 (NA)	0 (NA)	0 (NA)
65-74	3 (NA)	1 (NA)	2 (NA)	2 (NA)
75+	7 (18.92)	3 (NA)	4 (NA)	4 (NA)
<b>Total</b>	<b>10 (5.68)</b>	<b>4 (NA)</b>	<b>6 (NA)</b>	<b>6 (NA)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 1,015 hospital discharges of Gladwin County residents where diabetes was listed among the diagnoses. There were 53 (5.2%) of these hospitalizations that were directly due to diabetes, while an additional 395 (38.9%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 987 discharges with 60 (6.1%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	60	6.1%	53	5.2%
Hypertension	12	1.2%	4	0.4%
Other CVD	368	37.3%	391	38.5%
Kidney	6	0.6%	18	1.8%
Pneumonia	42	4.3%	54	5.3%
Other	499	50.6%	495	48.8%
<b>TOTAL</b>	<b>987</b>		<b>1,015</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 7 or 13.2% of the 53 hospital discharges with a primary diagnosis of diabetes. This compares to 5 amputations or 8.3% of the 60 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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Michigan Department of Community Health, Division of Chronic Disease and Injury Control/Diabetes, Kidney and Other Chronic Diseases Section  
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# DIABETES IN HURON COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Huron County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **2,310 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **50 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **20 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **940 Huron County adults have diabetes but are not aware of it.**<sup>4</sup> Among Huron County adults, **6,088 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Huron County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	270 ( 2.4)	150 ( 2.7)	120 ( 2.1)	270 ( 2.4)
45-54	380 ( 7.4)	220 ( 8.6)	160 ( 6.2)	360 ( 7.0)
55-64	480 (12.3)	220 (10.9)	260 (13.6)	470 (12.2)
65-74	550 (16.1)	310 (17.2)	240 (14.9)	530 (15.6)
75+	630 (17.6)	350 (16.6)	280 (19.0)	620 (17.3)
<b>Total</b> (95% CI**)	<b>2,310 ( 7.2)</b> (±220)	<b>1,250 ( 7.7)</b> (±150)	<b>1,060 ( 6.8)</b> (±160)	<b>2,250 ( 7.2)</b> (±220)

\* Difference in totals is due to presence of 80 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Huron County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the fifth leading cause of death for Huron County residents. Diabetes was the primary cause of death for 21 individuals (4.5% of all deaths) and a contributing cause in an additional 21 deaths (4.5%).<sup>6</sup>

### Deaths in Huron County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	1 (NA)	1 (NA)		0 (NA)
45-54	0 (NA)	0 (NA)		0 (NA)
55-64	4 (NA)	1 (NA)		3 (NA)
65-74	8 (14.55)	8 (26.67)		0 (NA)
75+	8 (12.70)	3 (NA)		5 (NA)
<b>Total</b>	<b>21 (9.09)</b>	<b>13 (10.92)</b>		<b>8 (7.69)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 909 hospital discharges of Huron County residents where diabetes was listed among the diagnoses. There were 51 (5.6%) of these hospitalizations that were directly due to diabetes, while an additional 338 (37.2%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 922 discharges with 71 (7.7%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	71	7.7%	51	5.6%
Hypertension	16	1.7%	11	1.2%
Other CVD	351	38.1%	327	36.0%
Kidney	6	0.7%	8	0.9%
Pneumonia	24	2.6%	31	3.4%
Other	454	49.2%	481	52.9%
<b>TOTAL</b>	<b>922</b>		<b>909</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 7 or 13.7% of the 51 hospital discharges with a primary diagnosis of diabetes. This compares to 9 amputations or 12.7% of the 71 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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# DIABETES IN ISABELLA COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Isabella County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **2,880 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **120 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **40 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **1,100 Isabella County adults have diabetes but are not aware of it.**<sup>4</sup> Among Isabella County adults, **7,529 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Isabella County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	780 ( 2.4)	460 ( 2.7)	320 ( 2.1)	710 ( 2.4)
45-54	540 ( 7.4)	310 ( 8.6)	220 ( 6.2)	490 ( 7.0)
55-64	560 (12.3)	250 (10.9)	300 (13.6)	530 (12.2)
65-74	500 (16.1)	290 (17.2)	210 (14.9)	470 (15.6)
75+	500 (17.6)	300 (16.6)	200 (19.0)	480 (17.3)
<b>Total</b> (95% CI**)	<b>2,880 ( 7.2)</b> (±400)	<b>1,610 ( 7.7)</b> (±290)	<b>1,250 ( 6.8)</b> (±280)	<b>2,680 ( 7.2)</b> (±390)

\* Difference in totals is due to presence of 220 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Isabella County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the sixth leading cause of death for Isabella County residents. Diabetes was the primary cause of death for 16 individuals (3.8% of all deaths) and a contributing cause in an additional 23 deaths (5.5%).<sup>6</sup>

### Deaths in Isabella County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	0 (NA)	0 (NA)		0 (NA)
45-54	1 (NA)	0 (NA)		1 (NA)
55-64	2 (NA)	1 (NA)		1 (NA)
65-74	4 (NA)	3 (NA)		1 (NA)
75+	9 (18.00)	4 (NA)		4 (NA)
<b>Total</b>	<b>16 (5.56)</b>	<b>8 (5.37)</b>		<b>7 (5.83)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 1,035 hospital discharges of Isabella County residents where diabetes was listed among the diagnoses. There were 54 (5.2%) of these hospitalizations that were directly due to diabetes, while an additional 365 (35.3%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 828 discharges with 57 (6.9%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	57	6.9%	54	5.2%
Hypertension	8	1.0%	9	0.9%
Other CVD	287	34.7%	356	34.4%
Kidney	9	1.1%	9	0.9%
Pneumonia	37	4.5%	36	3.5%
Other	430	51.9%	571	55.2%
<b>TOTAL</b>	<b>828</b>		<b>1,035</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 6 or 11.1% of the 54 hospital discharges with a primary diagnosis of diabetes. This compares to 13 amputations or 22.8% of the 57 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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# DIABETES IN LAPEER COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Lapeer County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **4,490 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **240 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **60 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **1,880 Lapeer County adults have diabetes but are not aware of it.**<sup>4</sup> Among Lapeer County adults, **14,558 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Lapeer County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	850 ( 2.4)	460 ( 2.7)	380 ( 2.1)	820 ( 2.4)
45-54	1,050 ( 7.4)	590 ( 8.6)	450 ( 6.2)	980 ( 7.0)
55-64	1,090 (12.3)	470 (10.9)	620 (13.6)	1,070 (12.2)
65-74	820 (16.1)	450 (17.2)	360 (14.9)	790 (15.6)
75+	680 (17.6)	400 (16.6)	280 (19.0)	670 (17.3)
<b>Total</b> (95% CI**)	<b>4,490 ( 7.2)</b> (±540)	<b>2,370 ( 7.7)</b> (±360)	<b>2,090 ( 6.8)</b> (±400)	<b>4,330 ( 7.2)</b> (±540)

\* Difference in totals is due to presence of 140 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Lapeer County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the sixth leading cause of death for Lapeer County residents. Diabetes was the primary cause of death for 22 individuals (3.5% of all deaths) and a contributing cause in an additional 44 deaths (7%).<sup>6</sup>

### Deaths in Lapeer County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	2 (NA)	1 (NA)		1 (NA)
45-54	5 (NA)	2 (NA)		3 (NA)
55-64	1 (NA)	0 (NA)		1 (NA)
65-74	3 (NA)	1 (NA)		2 (NA)
75+	11 (16.18)	8 (20.51)		3 (NA)
<b>Total</b>	<b>22 (4.90)</b>	<b>12 (5.29)</b>		<b>10 (4.85)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 1,640 hospital discharges of Lapeer County residents where diabetes was listed among the diagnoses. There were 120 (7.3%) of these hospitalizations that were directly due to diabetes, while an additional 621 (37.9%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 1,436 discharges with 97 (6.8%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	97	6.8%	120	7.3%
Hypertension	97	6.8%	26	1.6%
Other CVD	428	29.8%	595	36.3%
Kidney	20	1.4%	31	1.9%
Pneumonia	51	3.6%	58	3.5%
Other	743	51.7%	810	49.4%
<b>TOTAL</b>	<b>1,436</b>		<b>1,640</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 11 or 9.2% of the 120 hospital discharges with a primary diagnosis of diabetes. This compares to 11 amputations or 11.3% of the 97 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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# DIABETES IN MIDLAND COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Midland County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **4,420 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **110 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **60 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **1,800 Midland County adults have diabetes but are not aware of it.**<sup>4</sup> Among Midland County adults, **13,293 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Midland County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	760 ( 2.4)	430 ( 2.7)	330 ( 2.1)	720 ( 2.4)
45-54	940 ( 7.4)	560 ( 8.6)	390 ( 6.2)	860 ( 7.0)
55-64	980 (12.3)	450 (10.9)	520 (13.6)	960 (12.2)
65-74	870 (16.1)	510 (17.2)	370 (14.9)	830 (15.6)
75+	870 (17.6)	510 (16.6)	360 (19.0)	850 (17.3)
<b>Total</b> (95% CI**)	<b>4,420 ( 7.2)</b> (±500)	<b>2,460 ( 7.7)</b> (±350)	<b>1,970 ( 6.8)</b> (±350)	<b>4,220 ( 7.2)</b> (±500)

\* Difference in totals is due to presence of 210 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Midland County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the fifth leading cause of death for Midland County residents. Diabetes was the primary cause of death for 31 individuals (4.8% of all deaths) and a contributing cause in an additional 46 deaths (7.2%).<sup>6</sup>

### Deaths in Midland County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	0 (NA)	0 (NA)		0 (NA)
45-54	1 (NA)	1 (NA)		0 (NA)
55-64	8 (8.16)	3 (NA)		5 (NA)
65-74	5 (NA)	3 (NA)		2 (NA)
75+	17 (19.54)	10 (20.00)		7 (20.00)
<b>Total</b>	<b>31 (7.01)</b>	<b>17 (7.33)</b>		<b>14 (7.37)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 1,694 hospital discharges of Midland County residents where diabetes was listed among the diagnoses. There were 77 (4.5%) of these hospitalizations that were directly due to diabetes, while an additional 616 (36.4%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 1,586 discharges with 88 (5.6%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	88	5.6%	77	4.5%
Hypertension	21	1.3%	22	1.3%
Other CVD	591	37.3%	594	35.1%
Kidney	12	0.8%	14	0.8%
Pneumonia	50	3.2%	58	3.4%
Other	824	52.0%	929	54.8%
<b>TOTAL</b>	<b>1,586</b>		<b>1,694</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 5 or 6.5% of the 77 hospital discharges with a primary diagnosis of diabetes. This compares to 11 amputations or 12.5% of the 88 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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# DIABETES IN SAGINAW COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Saginaw County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **12,630 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **1,230 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **140 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **5,030 Saginaw County adults have diabetes but are not aware of it.**<sup>4</sup> Among Saginaw County adults, **32,769 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Saginaw County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White	African American
18-44	1,900 ( 2.5)	820 ( 2.1)	1,070 ( 2.9)	1,290 ( 2.2)	530 ( 3.6)
45-54	2,870 ( 9.4)	1,270 ( 7.9)	1,580 (10.8)	2,150 ( 8.7)	720 (13.2)
55-64	3,090 (14.9)	1,540 (14.4)	1,550 (15.4)	2,320 (13.2)	770 (26.4)
65-74	2,400 (16.6)	1,180 (14.9)	1,220 (18.7)	1,850 (15.1)	860 (42.1)
75+	2,370 (16.6)	1,480 (16.2)	950 (18.4)	2,080 (16.1)	390 (30.5)
<b>Total</b> (95% CI**)	<b>12,630 ( 7.4)</b> (±1,160)	<b>6,290 ( 7.0)</b> (±790)	<b>6,370 ( 7.8)</b> (±830)	<b>9,690 ( 6.9)</b> (±940)	<b>3,270 (10.8)</b> (±840)

\* Difference in totals is due to presence of 180 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Saginaw County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the fifth leading cause of death for Saginaw County residents. Diabetes was the primary cause of death for 85 individuals (4.2% of all deaths) and a contributing cause in an additional 139 deaths (6.9%).<sup>6</sup>

### Deaths in Saginaw County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White Male	African American Female	African American Male
0-44	5 (NA)	2 (NA)	2 (NA)	0 (NA)	1 (NA)
45-54	11 (3.83)	3 (NA)	3 (NA)	2 (NA)	3 (NA)
55-64	9 (2.91)	0 (NA)	3 (NA)	3 (NA)	3 (NA)
65-74	15 (6.25)	2 (NA)	6 (NA)	5 (NA)	2 (NA)
75+	45 (18.99)	24 (19.20)	14 (17.50)	2 (NA)	5 (NA)
<b>Total</b>	<b>85 (6.73)</b>	<b>31 (6.60)</b>	<b>28 (5.71)</b>	<b>12 (8.00)</b>	<b>14 (10.14)</b>

\*Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 6,667 hospital discharges of Saginaw County residents where diabetes was listed among the diagnoses. There were 497 (7.5%) of these hospitalizations that were directly due to diabetes, while an additional 1,970 (29.5%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 5,886 discharges with 437 (7.4%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	437	7.4%	497	7.5%
Hypertension	169	2.9%	130	1.9%
Other CVD	1,896	32.2%	1,840	27.6%
Kidney	24	0.4%	29	0.4%
Pneumonia	172	2.9%	228	3.4%
Other	3,188	54.2%	3,943	59.1%
<b>TOTAL</b>	<b>5,886</b>		<b>6,667</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 66 or 13.3% of the 497 hospital discharges with a primary diagnosis of diabetes. This compares to 67 amputations or 15.3% of the 437 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
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# DIABETES IN SANILAC COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Sanilac County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **2,550 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **110 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **30 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **1,040 Sanilac County adults have diabetes but are not aware of it.**<sup>4</sup> Among Sanilac County adults, **7,131 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Sanilac County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	380 ( 2.4)	210 ( 2.7)	170 ( 2.1)	370 ( 2.4)
45-54	460 ( 7.4)	260 ( 8.6)	190 ( 6.2)	430 ( 7.0)
55-64	550 (12.3)	250 (10.9)	290 (13.6)	550 (12.2)
65-74	570 (16.1)	320 (17.2)	240 (14.9)	550 (15.6)
75+	590 (17.6)	330 (16.6)	260 (19.0)	580 (17.3)
<b>Total</b> (95% CI**)	<b>2,550 ( 7.2)</b> (±270)	<b>1,370 ( 7.7)</b> (±190)	<b>1,150 ( 6.8)</b> (±190)	<b>2,480 ( 7.2)</b> (±270)

\* Difference in totals is due to presence of 50 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Sanilac County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the fifth leading cause of death for Sanilac County residents. Diabetes was the primary cause of death for 22 individuals (4.7% of all deaths) and a contributing cause in an additional 34 deaths (7.2%).<sup>6</sup>

### Deaths in Sanilac County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	1 (NA)	1 (NA)		0 (NA)
45-54	1 (NA)	0 (NA)		1 (NA)
55-64	4 (NA)	0 (NA)		4 (NA)
65-74	1 (NA)	0 (NA)		1 (NA)
75+	15 (25.42)	3 (NA)		12 (48.00)
<b>Total</b>	<b>22 (8.63)</b>	<b>4 (NA)</b>		<b>18 (15.93)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 1,086 hospital discharges of Sanilac County residents where diabetes was listed among the diagnoses. There were 74 (6.8%) of these hospitalizations that were directly due to diabetes, while an additional 394 (36.3%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 999 discharges with 96 (9.6%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	96	9.6%	74	6.8%
Hypertension	16	1.6%	21	1.9%
Other CVD	382	38.2%	373	34.3%
Kidney	10	1.0%	9	0.8%
Pneumonia	31	3.1%	40	3.7%
Other	464	46.5%	569	52.4%
<b>TOTAL</b>	<b>999</b>		<b>1,086</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 19 or 25.7% of the 74 hospital discharges with a primary diagnosis of diabetes. This compares to 10 amputations or 10.4% of the 96 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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# DIABETES IN SHIAWASSEE COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Shiawassee County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **3,820 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **110 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **50 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **1,570 Shiawassee County adults have diabetes but are not aware of it.**<sup>4</sup> Among Shiawassee County adults, **11,513 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Shiawassee County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	650 ( 2.4)	360 ( 2.7)	280 ( 2.1)	630 ( 2.4)
45-54	800 ( 7.4)	470 ( 8.6)	330 ( 6.2)	750 ( 7.0)
55-64	890 (12.3)	400 (10.9)	480 (13.6)	880 (12.2)
65-74	750 (16.1)	420 (17.2)	330 (14.9)	720 (15.6)
75+	730 (17.6)	440 (16.6)	280 (19.0)	720 (17.3)
<b>Total</b> (95% CI**)	<b>3,820 ( 7.2)</b> (±430)	<b>2,090 ( 7.7)</b> (±300)	<b>1,700 ( 6.8)</b> (±310)	<b>3,700 ( 7.2)</b> (±440)

\* Difference in totals is due to presence of 90 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Shiawassee County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the eighth leading cause of death for Shiawassee County residents. Diabetes was the primary cause of death for 10 individuals (1.6% of all deaths) and a contributing cause in an additional 41 deaths (6.4%).<sup>6</sup>

### Deaths in Shiawassee County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	0 (NA)	0 (NA)		0 (NA)
45-54	1 (NA)	0 (NA)		1 (NA)
55-64	1 (NA)	0 (NA)		1 (NA)
65-74	1 (NA)	0 (NA)		1 (NA)
75+	7 (9.59)	3 (NA)		4 (NA)
<b>Total</b>	<b>10 (2.62)</b>	<b>3 (NA)</b>		<b>7 (4.17)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 1,400 hospital discharges of Shiawassee County residents where diabetes was listed among the diagnoses. There were 96 (6.9%) of these hospitalizations that were directly due to diabetes, while an additional 416 (29.7%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 1,418 discharges with 105 (7.4%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	105	7.4%	96	6.9%
Hypertension	18	1.3%	19	1.4%
Other CVD	460	32.4%	397	28.4%
Kidney	10	0.7%	16	1.1%
Pneumonia	39	2.8%	42	3.0%
Other	786	55.4%	830	59.3%
<b>TOTAL</b>	<b>1,418</b>		<b>1,400</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 6 or 6.3% of the 96 hospital discharges with a primary diagnosis of diabetes. This compares to 10 amputations or 9.5% of the 105 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
- 6) Michigan Department of Community Health (MDCH) 2002 resident death data files.
- 7) Michigan Inpatient (hospital discharge) Database (MIDB) for 2002.

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# DIABETES IN TUSCOLA COUNTY

## Estimated Number of Persons With Diabetes (PWD) in Tuscola County

Estimates from the Michigan Behavioral Risk Factor Surveillance System (BRFSS) using a three year average, 2001-2003, indicate that in 2002 approximately **3,200 adults (aged 18 and up) have been diagnosed with diabetes.**<sup>1</sup> This includes an estimated **120 Latinos/Hispanics (8.65%)** diagnosed with diabetes.<sup>2</sup> In addition, it is estimated that **40 or 0.32% persons under the age of 18** have been diagnosed with diabetes.<sup>3</sup> National studies suggest that an additional **1,320 Tuscola County adults have diabetes but are not aware of it.**<sup>4</sup> Among Tuscola County adults, **9,442 have pre-diabetes** (40.1% of adults 40-74 years of age).<sup>5</sup>

### Estimated Number of Persons in Tuscola County in 2002 Diagnosed with Diabetes (Rate per 100)<sup>1</sup>

Age Group	Total*	Female	Male	White
18-44	510 ( 2.4)	280 ( 2.7)	230 ( 2.1)	490 ( 2.4)
45-54	640 ( 7.4)	370 ( 8.6)	270 ( 6.2)	600 ( 7.0)
55-64	760 (12.3)	340 (10.9)	420 (13.6)	750 (12.2)
65-74	640 (16.1)	360 (17.2)	280 (14.9)	610 (15.6)
75+	650 (17.6)	380 (16.6)	270 (19.0)	630 (17.3)
<b>Total</b> (95% CI**)	<b>3,200 ( 7.2)</b> (±350)	<b>1,730 ( 7.7)</b> (±240)	<b>1,470 ( 6.8)</b> (±250)	<b>3,080 ( 7.2)</b> (±350)

\* Difference in totals is due to presence of 120 of "other races" in the survey and the effects of rounding.

\*\* 95% CI represents the range within which the actual number of persons with diabetes in Tuscola County may fall with 95% confidence.

## Diabetes Deaths

In 2002, diabetes was the sixth leading cause of death for Tuscola County residents. Diabetes was the primary cause of death for 22 individuals (4% of all deaths) and a contributing cause in an additional 36 deaths (6.5%).<sup>6</sup>

### Deaths in Tuscola County of PWD for the Year 2002 with Diabetes Listed as the Primary Cause Number of Deaths (Rates per 1,000 Diabetic Population)

Age Group	Total*	Female	White	Male
0-44	2 (NA)	0 (NA)	2 (NA)	2 (NA)
45-54	2 (NA)	2 (NA)	0 (NA)	0 (NA)
55-64	4 (NA)	2 (NA)	1 (NA)	1 (NA)
65-74	4 (NA)	1 (NA)	1 (NA)	1 (NA)
75+	10 (15.38)	5 (NA)	4 (NA)	4 (NA)
<b>Total</b>	<b>22 (6.88)</b>	<b>10 (6.06)</b>	<b>8 (5.56)</b>	<b>8 (5.56)</b>

\* Any difference in the totals is due to presence of deaths of "other races". NA – Not Able to calculate with 6 or less deaths

**Diabetes Hospitalizations Reported in the Michigan Inpatient Data Base (MIDB)**<sup>7</sup> In 2002, there were 1,339 hospital discharges of Tuscola County residents where diabetes was listed among the diagnoses. There were 72 (5.4%) of these hospitalizations that were directly due to diabetes, while an additional 478 (35.7%) involved hypertension and cardiovascular disease, conditions commonly associated with diabetes. In 2000, the comparable figures were 1,150 discharges with 66 (5.7%) directly attributed to diabetes.

### Primary Reason for Hospitalization

Condition	2000		2002	
	Count	Percent	Count	Percent
Diabetes	66	5.7%	72	5.4%
Hypertension	22	1.9%	14	1.0%
Other CVD	410	35.7%	464	34.7%
Kidney	8	0.7%	6	0.4%
Pneumonia	31	2.7%	44	3.3%
Other	613	53.3%	739	55.2%
<b>TOTAL</b>	<b>1,150</b>		<b>1,339</b>	

### Non-Traumatic Lower Limb Amputations

In 2002, some form of non-traumatic lower limb amputation occurred in 9 or 12.5% of the 72 hospital discharges with a primary diagnosis of diabetes. This compares to 6 amputations or 9.1% of the 66 hospitalizations of persons with diabetes in 2000.

- 1) Michigan 2002 population estimates and the three year (2001-03) average from the Behavioral Risk Factor Surveillance System (BRFSS) - a statewide telephone survey of Michigan residents ages 18 years and older.
- 2) BRFSS data 2001 - 2003 rate of 8.65% ±1.64 Confidence Interval of 95% (CI).
- 3) Blue Cross/Blue Shield of Michigan Paid Claims Data, 2001 and BRFSS 2001-2003 data.
- 4) National Health and Nutrition Examination Survey, III 1988-1994 (NHANES III Series 11, No. 1).
- 5) US Health and Human Services news release, March 27, 2004.
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